Airborne Particle Concentration in the Yangtze River Basin

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ILAQH, together with Fudan University, participated in a major air quality monitoring campaign in the Yangtze River Basin in China in November 2015. The monitoring was carried out aboard an instrumented boat which sailed from the Port of Shanghai up the Yangtze River through a distance of 1075 km to the city of Wuhan and back with a total journey time of 14 days. In this paper, we will present our preliminary findings on particle mass and number concentration data obtained during this campaign. We will compare and contrast the particle concentrations in the many diverse environments constituting this region such as large cities, industry and rural farmland. The instruments were housed within a large shipping container on the open deck of the boat. The particle number concentration (PNC) and particle mass concentration (PM2.5) were monitored in real time with a TSI 3787 condensation particle counter (CPC) and a Sidepak aerosol monitor AM510, respectively. The data were processed and, using GPS data, classified into the three environments urban, industrial and countryside. Mean and median values were calculated in each environment for each day, considering only the times when the boat was in motion. The results indicate that the highest particle number and mass concentrations were observed when the boat moved past industrial regions and the lowest when it passed by countryside areas with minimum human activity. The analysis will also take into account other factors such as the wind speed and direction, speed of the boat, temperature and humidity.

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Prof Lidia Morawska
ANZAA Chair